

BLENDING TECHNICAL EDUCATION PROGRAMME WITH INDUSTRIAL SKILL REQUIREMENTS FOR THE WORLD OF WORK

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ABSTRACT

Technical education is a practical oriented programme designed to cater for individual seeking for employment in the industries and also to be self-reliant. With technical education, technical education graduates are also expected not be liabilities on the nation, their communities and families. It provides the individual with knowledge, skills and employment. There is the need to equip the youths with necessary and essential knowledge, skills and competencies to meet the need of industries. To effectively empower this, technical education curriculum need to be re-organized and recreated to meet the manpower needs that would refloat the new technology in industries. This paper, therefore, highlights the status of technical education programme and industrial skills required for the individual to gain employment among others. The challenges facing the blending of technical education programme and industrial skill acquisition were highlighted and suggestions proffered on the mode of tackling the challenges followed by recommendation based on the challenges. The paper after due consideration recommended that fund should be provided and lecturers should be assigned to different institutions by the industry to effect the link between the institution and the industry.

KEYWORDS: Blending, Education, Industrial, Programme, Requirements, Skill, Technical, Work and World

INTRODUCTION

The effectiveness of technical education is contingent upon meeting the needs of the society. When the world of work was based mainly on skilled workers and craftsmen, on-the-job training was the only method of training and, at that time, was considered sufficient. The Industrial Revolution and Subsequent Mass Production Techniques demanded new and different skills which justified the establishment of specialized education and training institutions in order to satisfy the needs of modern production and service sectors. The main objective of this type of training is to respond to the students' needs to acquire knowledge and skills and behavioural learning patterns which will be of use in different spheres of economic and social life.

The training encompasses levels either in educational institutions on the one hand and agricultural, commercial, industrial, service or any other field related to the world of work on the otherhand (Lugujjo and Manuindo, 1993). We are in fact in the phase of development where research on education for the world of work is likely to concentrate on improving the deficiencies of the process or on making a more comprehensive reform of the total system. To achieve this, it is necessary that co-operation be established or further developed and strengthened with enterprises and potential employers. The effectiveness of technical education and training programme is largely contingent upon the meeting the needs of industries in the society.

The requirement demands co-operation with business and industry through the creation of a variety of formalized linkages. The establishment of these linkages will inevitably provide a solid basis for curriculum development and support. The effectiveness of the technical education and training programme is contingent upon meet the needs of enterprises. This requirement demands co-operation with business and industry through the creation of a variety of formalized linkages. These linkages will inevitably yield a number of improvements in the preparation of relevant and well qualified graduates for the world of work.

Status of Technical Education Programme in Nigeria

Technical education programme has been designed and tailored towards the changing employment needs of different nations as they pass through the various stages in their social, economic and political development (Kayoma, 2009). In these countries including Nigeria, technical Education was introduced into the curriculum to meet the following:

- Reduce unemployment
- Equip students/youths with saleable skills useful for gainful employment
- To re-orientate youths for development of dignity in labour and to check urban migration, (Oharisi, 2007 cited in Koyama 2009).

It is regrettable to state that none of above mentioned objective has been achieved in Nigeria due to either poor implementation of the Technical Education programmes or deficiencies in the curriculum blending of the technical education programme and industrial skills. This has led to unemployment, dwindling situation of saleable skills and reduction of dignity in labour from the graduates of technical education programme. There is a general notion that Nigeria is producing graduates without employment opportunities as there are no graduates with the needed skills in the industries. A situation which portrays the country in negative light of graduate that is unemployable because of inadequate skills.

The present emphasis on technical education in the 6-3-3-4 system appears not to have a clear statement for self employment and the inculcation of entrepreneurial skills in the graduates of technical education programme. In view of the foregoing therefore, this researcher strongly supports the need to blend technical education programme with industrial skill requirements including entrepreneurial skills for the world of work in Nigeria.

The Goals of Teacher Education

Federal Government of Nigeria in National Policy on Education (2004) stipulated the following as the goals of teacher education.

- To produce highly motivated, conscientious and efficient classroom teacher for all levels of education system.
- To encourage further the spirit of enquiry and creativity in teacher.
- To help teachers to fit into social life of the community and the society at large and enhance their commitment to national goals.
- To provide teachers with intellectual and professional background adequate for their assignment and make them adapted to changing situation.

- To enhance teachers commitment for the teaching profession. The policy also stipulated that the minimum qualification for entry into the teaching professional shall be the Nigerian Certificate of Education (NCE); that all teachers shall be professionally trained.

Technical Education Institution and Industrial Skill Training

Technical Education at higher institutions as popularly pointed is for three purposes: (i) to train the minds of young people. (ii) For research activities and (iii) to recognize achievements considering these purposes the need for quality and relevance of the education in any tertiary institution cannot be over-stressed. The quality and relevance of higher education in today's dynamic world should exist between the objectives and content of education. This implies that the social expectation and skills needed within the world of work should be achieved through teaching and learning in tertiary institutions (Ogunleye, Oke, Adeyemo and Adenle, 2008).

Aladekomo (2004) states that before now, little attempts were made to translate the broad terms of the university education policy into consequences for employment planning. There is, for example, no provision for enterprise orientation for undergraduates or whether graduates could expect to find themselves in various kinds of self-employment.

Regrettably, most tertiary education systems especially those of developing society operate close-ended educational systems which are only good for the attainment of obsolete behavioural objectives that predetermine outcomes and foster lower-order thinking processes (Adelabu, 2006). Okebukula (2005) supporting the vie of Adelabu, reported that by the end of 2007 there were over two hundred programme across the entire universities and that these academic programmes lack relevance, hence the quality of programmes offered in Nigeria universities give absolutely no acknowledgement that the skills and knowledge may prove directly useful to students after schools as self-employment. The need has therefore arisen to link technical education programme to industrial skill requirement and job creation. The skills and competences needed for survival in an era of unemployment saga perhaps call for the adoption of other innovative approaches to tertiary institution education to foster divergent thinking, authentic reasoning and self directed exploration of topics and issues associated with interdisciplinary contents (Ezeugbor, 2010). Tertiary institutions, especially universities have a role to play in preparing the youth for the world of work. This is the cry of the present graduates of the universities without employment. It has become imperative and an issue of great urgency that technical education programme in different universities should be re-designed to incorporate industrial skills and knowledge of our immediate environment to assist graduate to be self-reliant and also gain employment after graduating.

UNESCO (2003) supported this idea by suggesting a review of existing curricula in terms of their objectives and content to develop interdisciplinary understanding of social economic and environmental factors for enterprise. UNESCO further calls for a review of recommended and mandated approaches to teaching, learning and assessment so that skills are fostered in different ways. Skills to be fostered in the process include skills for creativity, critical thinking, oral and written communication, collaborative and cooperation. Others include: conflict management, decision making, problem solving, planning, ICT usage and practical citizenship.

Co-operation Links with Industries

It can be stated clearly that a satisfactory links or partnership, however, can only exist if the training institution in charge of imparting knowledge and skills (supplier) understands fully the needs of industry (customers) and the clients is aware of the constraints under which the supplier operates. Prosser's (1949) theories of vocational education stated that the

schools workshop, laboratories and the total environment where vocational education nisi given must be adequately equipped to reflect the actual working environment (industries), the working environment is the industry. That is the school workshop; laboratories should train the students with the same equipment that the students as graduates will operate in the industries for production in the working environment. In short the school workshops as a training institution should look like the workshop of the industry where the student will work after the training. The co-operative link of technical education programme should be carried out in such a way that the training equipment of the industries should be known and procured by the institution for the training of students. The training manuals, procedures, knowledge and skills of the machines and equipment should be communicated to the training institution to serve as a guide to re-design their curriculum to accommodate industrial skills needed by the industries. It is only through this method that the students' effectiveness and efficiency in the world of work can be ensured after training (Umunadi, 1997).

This requires continuous interaction and dialogue between the institution and industries involved. Co-operation will only continue if the self interest of both parties is satisfied to some degree. An interface for this partnership is therefore a must for mutual benefits and national development.

The establishment of these linkages will inevitably provide a solid basis for:

- Curriculum adjustment and reforms
- Student placement for practical experience,
- Staff exchange (staff development),
- Identification of employment opportunities,
- Execution of joint projects,
- Selecting of part-time instructors
- Assessing the success of education, and
- Training in meeting the requirements of employers.

Policies Governing University/Industry Linkages

Effectiveness of technical and vocational education is contingent upon meeting the needs of industries. Ideally, therefore, these industries should also participate in the training of students who are the future workers. Presently, formal technical education programmes require students to spend a fraction of their time training in industries before graduation.

Students' Industrial Work Experience Scheme

This is a programme for students who are enrolled in institutions and who through a co-operative arrangement between school and industries, receive practical training during the long vacation in the co-operating industries. However, such institutions as the polytechnics and universities have extended their practical training period to last beyond the long vacation. Institutions like the universities and technical schools engage their students in this type of programme in order to improve their practical skills. Essentially, the aim of training is to give the students actual practical work experience in industry to complement the classroom lectures and workshop practices, thereby developing general and specific skills, knowledge and attitudes (Okoro, 2000).

In some educational institution, the programme is part of the course of study. Students in technical education programmes through attachment to industry are normally expected to successfully complete a minimum of six weeks or a maximum of one year training in an industrial establishment relevant to their various teaching subjects.

Industrial Training Fund (ITF)

The decree establishing the Industrial Training Fund came into force in 1971 with the aim to promote and encourage the acquisition of skills in industry and commerce with a view to generating a pool of indigenous training manpower sufficient to meet the needs of the economy (Okoro, 2000). He further stated that the ITF is financed by employers of labour. By this arrangement, employers with 25 or more employees contribute in respect of each calendar year, to the fund, a certain amount of its annual pay roll. Payroll here is the sum total of all basic pay, allowances and other payments made to any employee in an establishment for which the employee is liable to pay income tax.

The following are some of the functions of the fund as highlighted by Okoro.

- Encourages greater involvement of employers, especially small employers in the organisation and direction of training.
- As approved by the fund, the body bears a proportion of the direct cost of on-the-job and off-the-job training of the employees undergoing training course.
- The body seeks to harmonize all its training efforts and support with the activities of formal institutions as well as utilize their facilities for clearly defined job-oriented training programme.
- Organizes research studies into training as a support to other activities of the fund.
- Provides and directs building of training facilities of its own in places where nobody is doing anything or inadequate.
- The body works out co-operative machinery with industry and commerce whereby students in institutions of higher learning undertake mid-career work-experience attachment in industry or project which are compatible with their areas of study. The objective of this function is to assist in strengthening training capabilities throughout the nation.

Mode of Training Students

Students carry with them letters of introduction. The students are in most cases assigned to their supervisors for training and are absorbed in the operational process of the industry. In a number of organisations, the students are trained through the various sections and departments within the six months or one year duration of their industrial attachment. It is expected that the lecturers from the university or college visit the students to assess and dialogue with the supervisor and students concerning the training programme of the industry. At the moment, it appears that some lecturers pay visit to assess only logbook of students without discussion with students and supervisor. In addition, there has not been any lecturer attachment to industry. At the same time, there have been almost no assigned personnel coming from the various industries to offer part-time teaching and instruction at colleges and universities. The crucial link and interaction calls for a concert effort, as the benefits from such an arrangement are enormous for the world of work.

Relevance for Policy Blending of Technical Education Programme and Industrial Skill Requirements

The relevance of policy blending technical education area being reinforced by policies in the industry. For the purpose of this paper, the concern revolves around these pertinent questions: to what extent to policies concerned with employment and industrial skill development on one hand, do reinforce or are reinforced by policies concerned with human resources development through higher education and training institutions on the otherhand? Is there any relationship between Technical Education programme and training policy papers? To what extent do the technical education programme and training policies express concern about impact on post-school and post-training livelihood? Do the technical education and training policies project a vision of preparation for both employment and self-reliance? That is, is there any consideration for industrial skill development in the education and training policy papers? The importance of blending technical education and labour policies is very crucial for effective manpower planning (Aladekomo, 2004).

Thus, it seems obvious to many policy makers that there must be a straight forward connection between production and employment/unemployment. It is therefore imperative that inclusive and integrated policy for technical education, industry enterprise and with policy coherence amongst government departments be developed. It is true that technical education has a great role to play in Nigerian higher education institutions; however, greater attention should be given to the need to blend technical education and industrial training and policies with employment.

Challenges of Blending Technical Education Programme with Industrial Skills

Placement of Students

There are usually few industries that could provide sufficient on-the-job training for large number of students seeking for space in the industry. The reasons for this include the large number of students (all technical and universities) compared to the available spaces in the industries. Moreover, the few industries are owned by private individuals and some by government agencies, which are not always willing to extend their facilities to outside institutions.

Equipment

Equipments are inadequate in some industries for training students. The equipment available is restricted by some organisation for production and the skills of the industrial training staff are limited to the available equipment. The technology of the staff handling the equipment has not developed to such an extent as to involve highly production and some skills required in other industries. The manufacturing of these equipment and spare parts are carried out outside the country. It has been difficult for genuine training programme to be extended to many people at a time because spare parts may not be very easy to obtain for replacement of damaged parts during training. Machine and equipment for training are obsolete and replacement can take a long time due to logistics and other administrative constrain to procure new equipment from the manufacturers.

Attitudes of the Students

Students attitude are not geared towards acquiring skills for the improvement of themselves. They lack interest in training and subsequently lack knowledge about the benefits of training. The attitude of students during the training is that there will immediate benefit of allowances and the grading to pass his/her examination. The trainee or student on returning from a course, experiences a feeling of frustration when he finds that his newly acquired knowledge has no chance of being put to because the equipment often time may not be available in the company or industry.

Inadequate Allowances for Students

Students are most of times not given the allowances immediately. The allowances given after the industrial training are hardly enough to sustain the students. Most industries are willing to take on students on condition that there is no financial obligation, on the otherhand some industries top up the allowances. This kind of situation leaves the students in doubt and caught up a dilemma as he/she can hardly sustain his/her self during the period of training. Government insincerity and late payment of the allowance normally create doubt and thus making the training in the industry a difficulty task.

Fund

Government solely finance industrial training in Technical Colleges and Universities. The problem of finance is perennial one especially as regards the huge financial cost involved in training. Only the multi-national oil company which can afford to provide training facilities engage in the training of their staff.

In addition, most 4establishment are unwilling to release the necessary, funds to support the industrial training fund. Most often, students who are participating in work experience programme are faced with financial constraints in their allowances are not regularly paid.

Assessment of Participating Trainees

Assessment of students participating in industrial attachment is considered as an integral and important part of the student's training. This leads to a lack of seriousness by students during their training, leading to absenteeism or staying away from duty post. The institution based and industrial based supervisors are often co-operating with the students in award of marks during assessment which is not the normal process of assessment.

In general term therefore, there is a need to examine these aforementioned points and provide useful and lasting solution to these challenges for effective blending of technical education and industrial skills for the world of work.

RECOMMENDATIONS

- Technical education curricula need to be restructured to accommodate the needed industrial skills requirements for the world of work.
- Technical education should be properly funded by the state, federal government and non-governmental agencies for the procurement of the needed equipment and facilities that will assist the institution to train the students and develop them for the world of work.
- The government and the law makers should blend technical education and industrial training programme and policies to foster the needed effectiveness of the training programme in our institution.
- The government and non-governmental agencies should develop and build more industries to enable the students find industry in their field study to enable acquire industrial skills for the world of work.
- Adequate allowances should be paid to the students to take the training seriously and the supervisor to effectively supervise the student at the right place and time and actual assessment of the students during the training period.

- The industry should delegate one representative from the industry to the institution to enable the institution really establish a link with the industry in all ramification in the course of teaching and learning industrial skills and knowledge needed by the industries.

CONCLUSIONS

The various opinion of scholars in this paper revealed that there are enormous benefits associated with the blending of Technical Education programme and industrial skill requirements. Technical Education programme is designed for skill acquisition and a preparatory programme for the graduates to be gainfully employed in the industry. At the moment, it appears that the graduates of technical education programmes are not employable as a result of inadequate skills acquired from the technical education programme. It is on these aforementioned lapses that the researcher deems it necessary to study the situation association with the technical education programme and also looking at the possibilities of blending the technical education programme and the existing industrial skills required for the trainees to be gainfully employed at the end of the training programme in the industry. The paper highlights status of technical education programme, the co-operation links with industries, policies governing universities and industry linkages, students' industrial work experience scheme, industrial fund, mode of training students, relevance for policy blending of technical education programme and industrial skills requirement. The challenges of blending technical education programme with industrial skills was also addressed and analyzed. It is based on the aforementioned sub-heading that recommendation was made that fund should be provided to procure equipment and facilities among others.

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